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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/567,311

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Shozaburo Konishi

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EXAMINER

VASISTH, VISHAL V

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

06/22/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,311	Applicant(s) KONISHI ET AL.	
	Examiner VISHAL VASISTH	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicants' response filed on 3/9/2009 did not make any amendments to claims 1-17. Applicants filed a terminal disclaimer to obviate the nonstatutory double patenting rejection in the office action mailed on 10/07/2008 and therefore this rejection has been withdrawn. In light of the applicants' arguments, discussed below, a new ground of rejection is set forth.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1-14 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake et al., JP Publication No. 2001-316686 (hereinafter referred

to as Miyake) in view of Berlowitz et al., US Patent Application Publication No. 2002/0086803 (hereinafter referred to as Berlowitz).

Miyake discloses a lubricant (as recited in claim 9) and a system having a pair of DLC contacting faces being opposed to each other and moving relative to one another, wherein at least one of which is coated with a DLC film (as recited in claims 1, 8-9) and is suitably used in lubricating oils such as an engine and transmission oil (as recited in claims 1 and 6) (Para. [0001]).

The sliding members have a lubricant interposed between them used to lubricate the sliding members (as recited in claim 8) wherein the lubricant is a mineral or synthetic base oil (base oil as recited in claims 1 and 8-9) and has additives including molybdenum dithiocarbamate (sulfur-containing molybdenum complex as recited in claims 1 and 8-9) with a concentration of 0.01-0.2 wt% of molybdenum (within the range as recited in claim 13) and zinc dithiophosphate (phosphorus-based anti-wear agent as recited in claims 2, 10 and 16) (Para. [0020]).

The composition of Miyake does not explicitly disclose non-DLC contact surfaces having no DLC film wherein said lubricant is interposed between the non-DLC contact surfaces as recited in claim 7. The examiner is of the position that one of ordinary level of skill in the art would envisage using the same lubricant composition in an internal combustion engine for parts that are non-DLC containing contact surfaces.

Miyake as discussed above discloses the presence of a mineral or synthetic base oil to be used in combination with a DLC coating. Miyake does not, however, explicitly disclose a base oil wherein at least one of a hydrocracked mineral oil, a wax-

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isomerized mineral oil, and a poly-alpha-olefin base oil, and has a kinematic viscosity of 2 to 20 mm²/s at 100° C, a total aromatic content of not higher than 5 mass %, and a total sulfur content of not higher than 0.005 mass %. Miyake also does not disclose a friction modifier and a metal detergent.

Berlowitz discloses a lubricant composition for an internal combustion engine (Para. [0011]) comprising an isoparaaffinic hydrocarbon base stock such as Fischer-Tropsch (FT) derived base stock which undergoes hydrocracking (as recited in claims 1 and 8-9) (see Abstract and Para. [0012]-[0013]). The FT derived base oil has a kinematic viscosity of 4.83 cSt at 100°C (which is within the kinematic viscosity range as recited in claims 1 and 8-9) (Para. [0026]/Table 3), a total aromatic content of less than 0.1 wt% (within and encompassing the aromatics range as recited in claims 1 and 8-9) (Para. [0017]) and a total sulfur content of less than 1 wppm (within and encompassing the sulfur content range as recited in claims 1, 5 and 8-9) (Para. [0017]). The fully formulated composition of Berlowitz further discloses additives including alkali metal phenate detergents (as recited in claims 2, 10 and 14) (Para. [0011]), friction modifiers including glycol esters and ether amines (as recited in claims 2-4 and 10-12) and anti-wear additives including metal phosphate (sulfur-free phosphorus anti-wear compound as recited in claim 17). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the base oil and additives of Berlowitz in the composition of Miyake in order to lower the coefficient of friction and enhance the detergency and friction properties of the composition (Para. [0028]/Table 5 of Berlowitz).

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5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyake in view of Berlowitz as applied to claims 1-14 and 16-17 above, and further in view of Yagishita, US Patent Application Publication No. 2005/0272616 (hereinafter referred to as Yagishita).

The combination of Miyake and Berlowitz disclose all of the limitations discussed above including additives such as metal detergents. The combination does not, however, explicitly disclose a neutral alkaline earth metal salicylate.

Yagishita discloses a low sulfur lubricant composition for use in an internal combustion engine wherein the base oil can be derived from hydrocracking and produced by isomerizing GTL wax. The composition further comprises a neutral alkaline earth metal salicylate (a sulfur-free, neutral metal detergent as recited in claim 15) (Para. [0028] and [0048]). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Miyake/Berlowitz with the detergent of Yagishita because both additives are very well known in the art and would conventionally be used to enhance detergency properties in the composition.

Response to Arguments

6. Applicants' arguments, see page 4, paragraph 1, and page 6, paragraph 1, and page 6, paragraph 5 filed 3/9/2009, with respect to claims 1-17 have been fully considered and are persuasive. The rejections of 35 USC 103 over Tinney as evidenced by Clark, Tinney in view of Yagishita and Shirahama have been withdrawn.

Applicants argue that the present invention provides unexpected results and point to the data in Table 1 of the instant specification to support their position. The data, however, is not commensurate with the scope of the claims. For example, the inventive oils from the instant specification include specific hydrocracked base oils with narrow kinematic viscosities, for example base oil 1 has a kinematic viscosity of 4.0 mm²/s which is much narrower than the range recited in claim 1. The same can be said regarding the aromatics and sulfur contents of the base oil. Example 1, base oil has an aromatic content of 1.0 mass% and a sulfur content of 0.001 mass%.

Furthermore, the additives blended with the base oil to formulate the finished composition are in very specific concentrations and are very specific compounds. For example in base oil 1, the friction modifiers are glycerin monooleate. Claim 1 merely recites a sulfur-containing molybdenum complex and does not include any of the other additives or any of their respective concentrations. Therefore, the arguments are not persuasive to show unexpected results.

Conclusion

7. There were unused X references that were obtained from the search report. The references above disclose all of the claimed elements.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VISHAL VASISTH whose telephone number is (571)270-3716. The examiner can normally be reached on M-R 8:30a-5:30p.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ellen M McAvoy/
Primary Examiner, Art Unit 1797

VVV